PRECISION WARFARE ENABLES INTERDEPENDENT FIRES AND MANEUVER IN 2010

A MONOGRAPH
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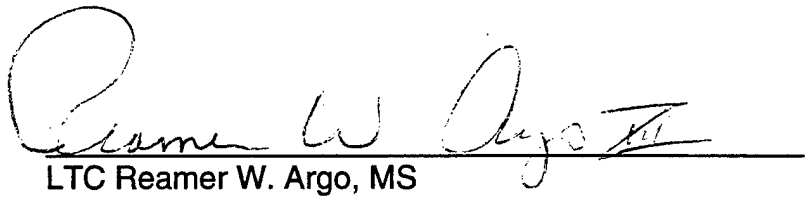

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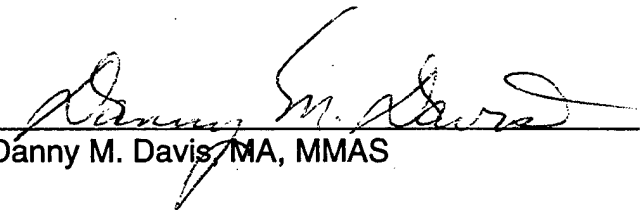

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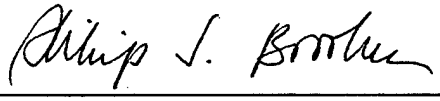

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ABSTRACT

Title: Precision Warfare Enables Interdependent Fires and Maneuver in 2010 by John T. Smith, USA, 50 Pages

The US Army is in the midst of a revolution in military affairs (RMA). Significant advancements in informational technologies and precision weapons are providing unprecedented potential for future warfare. These changes challenge traditional applications of combat power. The current RMA will change the use of fires and maneuver and result in precision warfare. This monograph discusses the possible relationship of fires and maneuver on the battlefield of 2010.

Chapter one defines the environment and assesses the importance of changing to an information-age Army. A challenging future security environment and the current RMA introduces the need for change.

Chapter two establishes the need to change the use of fires and maneuver in future warfare. The chapter uses Joint Vision 2010 and Army Vision 2010 to define the U.S. Army's change process. A discussion of trends for future warfare highlights the need for change in the Army of 2010.

Chapter three is an in-depth study into the capabilities that Army 2010 will likely enjoy. The chapter organizes itself around three of the Joint Vision 2010 Operational Concepts: Gain Information Superiority, Precision Engagement, and Dominant Maneuver. This chapter examines the capabilities of the most significant systems on the 2010 battlefield to uncover the way our doctrine could change with respect to the employment of fires and maneuver.

Chapter four uses Robert Leonhard's *Move-Strike-Protect Model* to address the historical relationship between fires and maneuver in the battlespace. The model helps to understand the advantage precision warfare offers. These advantages enable precision warfare, a more interdependent use of fires and maneuver. The discussion of precision warfare suggests a change in the future relationship between fires and maneuver.

The possibilities that the advancements in technologies present are seemingly endless. The capability that precision warfare offers suggests changes in the future roles of fires and maneuver. Aided by information dominance, precision warfare will allow maneuver to move faster and more efficiently and fires to improve lethality.

In times of war, the enemy quickly adapts to new doctrine and capabilities. It is therefore dangerous to place all hope in a one-sided approach to the problem of developing future doctrine for an army. The author of this monograph advocates an interdependent solution using fires, maneuver and Intelligence together. There are no favorite weapons; the solution is the interdependent use of fires and maneuver.

Implications of this study confirm our current emphasis on information dominance and call for an increasingly integrated use of fires and maneuver in the future battlespace. Such an increase will result in an interdependence where the collective effect of their union is greater than their individual contributions. The author suggests a necessary paradigm shift to precision warfare. Army 2010 needs farsighted leadership now to write the doctrine, train and equip the force that will continue to deter enemy aggression in the 21st Century.

Table of Contents

Chapter 1

The Issues: Interdependent Fires and Maneuver

It would seem in theory that fire and movement represent opposite ends of a spectrum. But in reality, one cannot exist without the other, for fire and movement are complementary and mutually dependent. It is movement that allows us to bring our fires to bear on the enemy just as it is the protection of fires that allows us to move in the face of the enemy. It is through movement that we exploit the effects of fires while it is the destructive force of fires that adds menace to our movements.

Warfighting, 1989
FMFM 1[1]

Introduction

The writers of this year's Quadrennial Defense Review make the assessment that the threat of a "horrific, global war has receded."[2] However, they quickly caveat this assessment with knowledge that "...new threats and dangers -- harder to define and more difficult to track -- have gathered on the horizon."[3]

We live in an environment where technology improves by a factor of ten every four to seven years.[4] We must understand change. The U.S. Army will help navigate change and uncertainty in the years ahead. Colonel David A. Fastabend highlights the importance of establishing doctrine as an engine of change in a recent article entitled "Endless Evolution".[5]

FM 100-5, Operations, our keystone doctrinal manual, has an average shelf life of five years. Therefore, technology doubles in efficiency three times during the life of our

"How to Fight" manual. These numbers corroborate Fastabend's emphasis on developing a forward-looking tactical doctrine. The better the military understands doctrine, the more efficient the military will operate in this challenging environment.

This monograph will develop the thesis that precision warfare promises better integration of fires and maneuver, enabling commanders to move faster and strike harder. Although Army doctrine espouses the integrated use of fires and maneuver integration is a recurring problem for commanders. Trends from combat training center after action reports show that commanders regularly execute tactical plans that do not adequately integrate fires and maneuver.[6] Precision warfare will change this trend by helping commanders improve their situational awareness.

Army Chief of Staff, Dennis J. Reimer suggests in an article "Dominant Maneuver and Precision Engagement" that, although fires contribute significantly to successful operations, they cannot fully dominate battlespace across the full spectrum of conflict.[7] "Fully dominating battlespace" requires the integration of all operational tasks [force projection; force protection; information superiority; precision engagement and dominant maneuver].

General Reimer notes that the enemy quickly adapts psychologically and technologically to even the most effective fires. Although fires can shape, he stresses a most penetrating reason for avoiding an over-reliance on fires is fires alone cannot accomplish all other operational tasks. Fires need the complementary and mutually dependent support of maneuver to be able to dominate maneuver, project and protect the

force. The opening quote for this chapter captures the relationship correctly. It is not fires **or** maneuver; it is fires **and** maneuver.

Future Security Environment

The President emphasized his strategy to preserve America's position as the world's leading force in this year's State of the Union Address. President Clinton stands "...committed to sustaining our active engagement abroad in pursuit of our cherished goal, a more secure and prosperous America in a more peaceful and prosperous world where democracy and free markets know no limits."[8] United States National Security Strategy recognizes the fact that America clearly has a responsibility for maintaining stability in the world. America cannot walk away from its global interests and responsibilities or our citizens' security and prosperity will surely suffer. Therefore the U.S. Army must maintain itself as a relevant force that keeps pace with a changing international security environment. Again, the importance of maintaining doctrine to correspond to the force is evident.

The U.S. military has changed focus from a threat-based force to a capability-based force. Five trends that describe future warfare are: increased lethality and dispersion, increased volume and precision of fires, increased integration of technologies, achievement of greater mass and effect, and refinements in invisibility and detectability.[9] These trends suggest the need for a more developed, interdependent relationship between fires and maneuver.

Today, asymmetry and uncertainty characterize the security environment. In an article entitled "The New Logic," the Armed Forces Journal described the challenge of the future security environment and the need for a new mental model, a "new logic."[10] The challenge is two-sided and requires maintaining "...sufficient military strength to continue to deter interstate war ... while at the same time growing military capabilities that can prevent and defeat asymmetrical threats."[11] The "New Logic" brings home the problems of over-reliance on any one system to win our nation's wars.

History has shown that no single nation is able to sustain itself as the predominant world power. However, the United States has been a prominent world power since World War II. The U.S. has a moral obligation to maintain itself as a world superpower. No other single nation has the capability to maintain such a strong position. America has opposed the proliferation of weapons of mass destruction, the aggression of North Korea, and a myriad of other challenges to international security and stability. The United States inherited common recognition as the leading world power with the end of the Cold War and consequently accepts the responsibility for leadership both at home and abroad.

The national security strategy for this new age is "*prevent-deter-win-support*".[12] [*prevent* threats from emerging, *deter* threats that do emerge, *win* any conflict, and *support* domestic authorities at home.] This strategy begs the question: How long can the United States continue to maintain itself as a world power? The U.S. military will play an important role in the international arena. The need for a "New Logic" is important to the

future of the U.S. military. What does it take to maintain our dominance? This question is an underlying theme for this study of appropriate doctrine in the 21st Century.

One of the central objectives of America's National Security Strategy is "to enhance our security with ... military forces that are ready to fight and win."[13] Currently our most likely conflicts are with enemies who are fighting a total war from their perspective.[14] For example, any nation challenging America must harness most of their population and resources to mount even a reasonable threat. This affects the nature of the conflict. Fighting and winning against enemies who are willing to fight a "total war" requires significant capability now and in the future. America's National Military Strategy establishes that deterring and defeating threats to our country and its interests is the U.S. military's central purpose.[15] Considering the wide range of threats prevalent today, the U.S. Army must ensure it is ready to fight and win by maintaining a strong position based on demonstrated capabilities and well-established doctrine.

Our strategies clearly lay out the task -- to maintain the U.S. Army as a decisive force. The method for accomplishing this task is not so clear, and even less clear is what this force will look like in 2010. However, it's the Army's responsibility to organize and lead itself in such a way as to maintain a decisive force. The environment will have a significant impact on Army 2010.

General John M. Shalikashvili described the international security environment as one marked by change and uncertainty. He suggested that "resurgent nationalism, the challenge of new and failing states, religious conflicts, and international terrorism, makes the security environment dangerous and unpredictable."[16] The international security

environment responds to the needs of each of the individual nations. There are over 191 nations in the world today.[17] Certainly this many forces existing in the world, each with a unique agenda for national security merit the label "environment of change." Not only the forces that General Shalikashvili identified, but also the responses to those threats are important to understanding the complexity of this "environment of change." Any doctrine that the U.S. Army develops must be able to address the challenges such a complex environment demand.

The need to maintain a credible force against a wide array of likely threats drives the need for improving our current doctrine. A dynamic future security environment will require significant substantial improvements in both systems and the doctrine for employing those systems. The U.S. Army is changing, maneuver warfare is slowly being replaced by precision warfare as capability and doctrine allow.

Conclusion

The current revolution in military affairs (RMA) and the changing needs of the future security environment will have a significant effect on precision warfare at the tactical level. I believe that as technology enables the future battlespace to become more connected and as information dominance becomes a reality the use of fires and maneuver will change to a more developed interdependent relationship. They will become more integrated in future battlespace allowing commanders to move faster and strike harder.

Chapter 2

Assessing the Importance of the Task at Hand--Change

Accelerating rates of change will make the future environment more unpredictable and less stable, presenting the Armed Forces with a wide range of plausible futures. Whatever direction global change ultimately takes, it will affect how we think about and conduct...operations in the 21st century. How we respond to dynamic changes concerning potential adversaries, technological advances and their implications, and the emerging importance for information superiority will dramatically impact how well the Armed Forces can perform its duties in 2010.

"America's Military--Preparing for Tomorrow"
-- General John M. Shalikashvili[18]

Introduction

General Shalikashvili's thoughts suggest the difficulty as well as the importance of change. Continued uncertainty will fuel great debates over the best course for adapting to future environments. Change will challenge the military to maintain the current capabilities while investing time, money and resources in the Army of the future. The importance of changing to meet new and different threats is essential to maintaining our strength and position in the world. Assessing and understanding the importance of change is the necessary first step. The changing nature of the Army requires a more efficient use of precision engagements and dominant maneuver. This quest promises a new type of precision warfare.

Interwar Years

Jean de Bloch predicted in 1909 the predominant role of lethal, accurate, and voluminous fire and the unprecedented complexity of command and control in future conflicts.[19] Today, the U.S. Army is in interwar years much like those of the United States at the turn of the century. The Army struggles with change today just as de Bloch struggled with change, the increasing precision and lethality of artillery, at the turn of the century.

Mark Bender highlights yet another set of interwar years this century in his book *Watershed at Leavenworth.*[20] Bender's book illustrates that the interwar periods are uncertain times for the military. Bender's book suggests that the Army spent much of the 1920's wondering if it focused on the "right stuff." Considering the litany of articles on "Force XXI," the "Army After Next," and "The Future of Warfare," it is safe to say that many people today entertain similar concern about our focus. Just as the Army of the 1920's found itself in a period of significant change where command and control systems developed, weapons systems improved, and doctrine changed, so too is the Army of the 1990's.

Both interwar periods dealt with similar issues improving weapons and command and control systems. These issues remain. Today, there is no debate about whether we will change. . Change is inevitable. The main consideration regarding these issues today seems to be whether evolutionary change will evolve or revolutionary change will transform. Ralph Peters suggests the importance of a sound doctrine in his paper "After the Revolution" to navigate these periods. In fact, he believes that understanding the

environment would be of far more use than any number of brilliant machines.[21] This point emphasizes the importance of the types of thinking that goes on during these interwar years.

The Change Focused Process

Developing the future doctrine of the Army requires thought processes focused on change. Two important characteristics of the thought process are flexibility and adaptability. These characteristics empower change by adapting to the needs of an environment. General Reimer identifies the importance of the thought process in terms of "Challenge and Change: A Legacy for the Future."[22] These two mindsets characterize the thought process necessary for change.

Change so concerned the United States that Congress established the Quadrennial Defense Review (QDR) to conduct a study of the future roles and missions of our armed forces. The central focus of the study was to examine the change process and to propose a plan to restructure the armed forces for the 21st Century. The QDR specifically described the Army's change as follows.

> The last eight years have signaled enormous change for the U.S. Army. The Army has transformed itself from being a forward-stationed Cold War force designed primarily to conduct large-scale operations on the plains of Europe, to being power-projection force capable of rapidly delivering decisive military force anywhere in the world.[23]

Acknowledging this change, the QDR reviewed the process of change by looking at force structure, budgetary considerations, likely threat scenarios and strategic approaches to future needs of the Army.

Defense Secretary William S. Cohen announced that the findings of the QDR represented "the beginnings of a process" to tailor the Armed Forces to the changed needs of the 21st Century.[24] Secretary Cohen's emphasis on the process of change is significant here. He further stated "This [change process] is going to take several years to develop a consensus."[25] The implication for the U.S. Army is that a period of significant change will transform the Army in the 21st Century.

Navigating Change

The problems associated with doctrine for the Pentomic Division and the lack of preparedness evidenced in Task Force Smith are historical examples that temper thoughts on change. "Will we get our future doctrine right?" is an overriding concern of military planners. What happens if we invest lots of money into making these changes and we are wrong? Throughout history, peace-time armies struggled to prepare for the next war. Certainly the U.S. Army did not prepare well for World War II or Korea or even Vietnam during interwar periods. Addressing this issue, Sir Michael Howard boldly asserted:

> I am tempted to declare dogmatically that whatever doctrine the Armed Forces are working on now, they have got it wrong. I am also tempted to declare that it does not matter that they have got it wrong. What does matter is their capacity to get it right quickly when the moment arrives.[26]

Howard addresses an important issue here -- the difficulty of getting doctrine right in a peacetime environment.

President Clinton emphasized the importance of focusing on change: "If you do not work to make change your *friend*, then it will certainly become your *enemy*."[27] Army leaders responded to the need to manage change by updating doctrine, taking advantage of modernization and digital technologies, using distributed interactive simulations and integrating experiments and training exercises.[28]

Many theorists have attempted to be proactive by attempting to describe the future of warfare. Based on these theories, military planners take steps to change organizations, equipment, and training to meet the needs of the future battlespace. The merits of these endeavors are laudable, but planners have traditionally not been very successful adapting to the changing needs of future environments. Many authors today purport that future conflict will be vastly different from the last war.[29] According to them, the Army is undergoing a fundamental change that will affect the nature of tactics and doctrine well into the 21st Century.

It is very likely that, as technologies improve our ability to decide, detect, deliver, and assess, doctrine will change.[30] Doctrine, tactics, and capabilities will allow precision engagement and dominant maneuver to take a much more decisive role in battlespace. Doctrine must address both precision engagement and dominant maneuver. In future war neither will be able to be decisive acting independently. The complexity of the enemy threat suggests that precision engagement and dominant maneuver will need to be interdependent to be most effective.

Joint Vision 2010

United States military leaders developed Joint Vision 2010 to navigate change in the military. The purpose of Joint Vision 2010 is to meet the overall security interests of the United States in the coming decade. "Joint Vision 2010 is the conceptual template for how America's Armed Forces will channel the vitality and innovation of our people and leverage technological opportunities to achieve new levels of effectiveness in joint warfighting."[31] General John M. Shalikashvili, envisioned tomorrow's forces as "...quality people trained, equipped, and ready for joint operations: persuasive in peace, decisive in war, and preeminent in any form of conflict."[32] Joint Vision 2010 clearly establishes expectations for our overall military force structure and capabilities. Five operational concepts form the centerpiece of Joint Vision 2010.[33] See Appendix C for information on the operational concepts. This monograph will focus on three of these operational concepts: Information Superiority; Precision Engagement; and Dominant Maneuver.

Army Vision 2010

The Army leadership in turn developed Army Vision 2010 to focus the U.S. Army on accomplishing the objectives outlined in the Joint Vision 2010. Army Vision 2010 expands the concepts introduced in Joint Vision 2010 by explaining each concept, discussing enablers, and identifying the technologies that will support the operational concept. By doing so, Army Vision 2010 provides significant insights into the way in which doctrine for fires and maneuver could possibly change. General Dennis J. Reimer's

vision for Army 2010 emphasizes an important theme: "...changing to meet the challenges of today...tomorrow...and the 21st Century."[34] Army Vision 2010 is a framework for change that will focus the efforts of the Army on learning to adapt to the future environment.

Army 2010 -- Our Response to Change

A Strategic Studies Institute study entitled "The Revolution in Military Affairs: Prospects and Cautions" shows the continued emphasis on change. Doctor Tilford's work leaves no doubt that we are in the early stages of a RMA. Therefore, the doctrine of Army 2010 must be a response to the environment which is undergoing an RMA. The fact that an RMA depends on the "confluence of political, social, and technological factors"[35] suggests the size and scope of the change envisioned.

Considering Doctor Tilford's discussion and the abundance of articles available today addressing change, the focus on technological change seems to be gaining momentum. Conservative estimates suggest that technology will improve by a factor of twenty between now and 2010.[36] This focus suggests that Army 2010 will be the product of significant thought that allows the Army to better adapt to the environment. These changes can empower us to make smart decisions about the way that we organize, train and equip for future war. This is essential to developing sound doctrinal approaches for Army 2010.

An eye-catching article entitled "Select enemy. Delete," published in the Economist, describes the most important aspects of this RMA. The RMA revolves around three significant advances:

- Gathering intelligence. The digitized battlefield improves the ability to gather information. Data collected from a wide array of sensors inundate collection managers. Collection managers have access to sensors from satellites, aircraft or unmanned aircraft. Instantly the intelligence officer has made a quantum leap in his ability to see the battlespace.
- Processing information. The battlespace is becoming increasingly automated. Commanders now have added capability to process friendly and enemy information. The addition of computers in the Army Tactical Command and Control System (ATCCS) significantly improves the Army's ability to process data. These sophisticated systems improve their ability to command, control, communicate and compute on the battlespace.
- Using Intelligence. Destroying deep targets through the use of long range precision strikes is one example of the increasing interdependence of systems. In this case precision engagement and information dominance are mutually dependent. Precision guided smart munitions such as the Army Tactical Missile System (ATACMS) rely on information dominance capabilities such as the Unmanned Aerial Vehicle (UAV) to effectively use intelligence and ultimately destroy the target deep. [37]

These increased abilities force the tactician to reconsider how doctrine should evolve.

Technology -- A Response to Change

The U.S. Army is a capability-based force operating in an uncertain world. Requirements to "fight and win" our nation's wars places significant challenges before the Army -- be effective against any threat in any environment. Technology is the defining difference that makes the U.S. Army the most capable power in the world today.

The application of technology has many uses. The U.S. Army started a revolution from the "...foxhole to the factory that will leverage information age technology to produce a more lethal, deployable, sustainable, and versatile force."[38] Technology offers the promise of doing more with less. The U.S. Army maintains a decisive edge because of its significant technological advantage.

It will become increasingly more difficult to maintain a decisive edge given the accelerated rates of change. In today's environment, nations quickly share advanced technology around the world. This type environment gives potential adversaries the capability to procure niche technologies and use them to gain temporary or local victories. The price for failing to harness the capability of future information-age technology is high. "Failure to understand and adapt could lead today's militaries into premature obsolescence and greatly increase the risks that such forces will be incapable of effective operations against forces with high technology."[39] It is important to develop tactics and doctrine that optimize the available technologies, force structure, and capabilities of individual units.

Guilio Douhet's believed, "Victory smiles upon those who anticipate the changes in the character of war, not upon those who wait to adapt themselves after the changes

occur."[40] Changes in technology develop a cyclical pattern of adaptation in armies. Each side responds to change with a new use of technology. James K. Morningstar suggests in his article entitled "Technologies, Doctrine and Organization" that we must develop doctrine and organizational structures to fully realize the revolutionary potential of new military technologies. This doctrine should be precision warfare.

As Morningstar suggests, technology does not always provide the necessary means to win. A central theme to this study is that there are limitations to technology and doctrine must acknowledge these limitations in terms of how we fight Army 2010. In a recent Defense News article, Marine Corps Commandant, General Krulak, warned against relying to heavily on technology.[41] General Dennis Reimer warns as well that there is a danger in placing too much emphasis on precision engagement and unproven "silver bullets."[42] These important views emphasize the necessity of managing change and developing the doctrine now to determine how we will fight based on advanced technologies.

Trends for Future Warfare

President Clinton expressed concern for the current security environment as follows. "The challenges are many -- terrorism; the threat of weapons of mass destruction; drug trafficking; environmental degradation; ethnic, religious and racial concerns; [and] dealing with the sea changes occurring in Asia and elsewhere throughout the globe."[43] Despite these challenges, defense spending has decreased and is not likely

to increase in the near future. Defense planners are therefore trying to develop and procure new systems on limited budgets.

Certainly there will be tradeoffs. Deputy Defense Secretary John P. White emphasized that the Department of Defense is trying to maintain fiscal responsibility while preserving land, sea and air dominance.[44] He further outlines the specifics of DOD's strategies. The summarized comments below only address U.S. Army systems, although Secretary White discussed systems from other services in each area.

- Emphasizing new leap-ahead technology for new warfighting capabilities. The Modernization Plan addresses the RAH-66 Comanche reconnaissance attack helicopter.
- Accelerating cost-effective upgrades to existing systems. The Modernization Plan addresses the M1 Abrams Tank, the Bradley Fighting Vehicle and the Apache Attack Helicopter.
- Investing in technology to enhance battlespace situational awareness allowing systems to precisely locate targets. A key part of this system is the communication and navigation pieces to synthesize all information into one relevant common picture.[45]

Secretary White emphasized the importance of investing in the Modernization Plan. During fiscal year 1997 DOD allocated $39 billion to force modernization and over the next five years the total investiture in the modernization effort totals $250 billion.[46] These initiatives suggest that the trends of future warfare will continue towards increased lethality and tempo using precision fires, dominant maneuver, and information dominance.

Conclusion

This chapter assessed the importance of change. It established the importance of the use of the two keystone documents, Joint Vision 2010 and Army Vision 2010, to help navigate the revolution in military affairs. The next thirteen years will drastically change how the Army fights. Technology will continue to play key roles in the evolution of doctrine. Reviewing current trends suggests that the one thing that will be constant in Army 2010 is change. This chapter established the need for continued change. The Army is responding to change with technology, doctrine and equipment which will help fires and maneuver become more integrated. Chapter 3 will use Robert Leonhard's Move -- Strike -- Protect Model to closely examine the conventional use of fires and future of precision warfare.

Chapter 3

Future Capabilities: The Army in 2010

If the Army is to continue to deliver victory in the 21st Century, we cannot rest on our laurels. The world has changed, and every passing year brings new technology with the potential to change the character of warfare.

Decisive Victory White Paper 1994[47]

Introduction

The U.S. Army is in the midst of a revolution in military affairs. The Army will be markedly different once the revolution is complete: organizations will change; equipment will change; the Army will train differently; and the U.S. Army will conduct war differently. These differences will transform the Army into the information-age with information technologies that are twenty times better than the Army of today.[48] The future capabilities of Army 2010 will be significant.

This chapter looks at the capabilities of systems which facilitate precision engagements and dominant maneuver. The hypothesis for this chapter is: more capable, more advanced systems in 2010 will improve the dependence and integration of fires and maneuver in the battlespace.

Increased lethality and dispersion, increased volume and precision of fires, increased integration of technologies, greater mass and effect, and refinements in invisibility and detectability are capabilities that Army 2010 divisions will enjoy.[49] These capabilities will enhance capabilities by fostering mutual dependence and

complementary support. Mutual dependence and complementary support will allow a beneficial interdependence between systems to develop that will facilitate fires and maneuver.

Keeping the U.S. Army the most powerful force in the world is the objective of the Commanding General of the U.S. Army Materiel Command, General Johnnie E. Wilson. He believes that "...advanced technology is no longer a 'nice to have' luxury but it is absolutely necessary and will be the key combat multiplier."[50] General Wilson believes that the Army "...will achieve key technological and material advantages through the combined effectiveness and integration of systems on the battlefield."[51] Some of the key advantages are evident in the capabilities discussed above and will help fires and maneuver to grow more interdependent. For example, the trend that suggests future warfare will better integrate technologies is a likely future capability that will foster interdependence.

Capabilities Based Force

As the Army continues to exploit future technologies, "a capability based force" appears to be an apt description for today's Army. The capabilities are interdependent: information dominance provides the targeting information essential to precision engagement and dominant maneuver. Two systems that will play key roles in this interdependent relationship are the Crusader howitzer and the M1A2 tank. The Crusader's increased responsiveness, firepower and survivability create capabilities that allow fires to facilitate precision warfare through fires and maneuver. Similarly, the increased responsiveness, firepower, and mobility of the M1A2 create opportunities for

maneuver to facilitate precision warfare through fires and maneuver. Appendix A and B outline precision engagement and dominant maneuver capabilities for these two systems. These appendices establish just one example of the increased capabilities of each operational concept.

There are many more success stories that substantiate General Wilson's claim to the "most powerful Army in the world today."[52] The Apache Longbow is a very lethal attack helicopter that provides a dominant maneuver capability as well as an information dominance capability. The Army Tactical Missile System (ATACMS) is another very lethal weapon that provides long-range precision. The Unmanned Aerial Vehicle (UAV) and the Joint Strategic Targeting and Reconnaissance System (JSTARS) are two examples of information dominance systems available to the division. These examples suggest that the future capabilities of the Army will allow doctrine to change because there are now more capable tools that support deep operations. The relationship between the use of fires and maneuver will become more efficient, integrated, and therefore significantly more lethal.

Maintaining a Technological Advantage

As the U.S. Army considers future capabilities and decisions about how to fight in the 21st Century, it must also consider the challenge of maintaining a significant technological advantage. The strategy for maintaining decisive capability is to use leap-ahead technologies that create an overmatch for any potential enemy over the next fifty years.[53] The fact that many of the information dominance capabilities have applications in the business world makes it difficult to maintain a technological advantage. Not

surprisingly therefore, past technological edges have not lasted long in conflict. The loss of life in war has been a powerful agent of change.

Joint Vision 2010 Operational Objectives

The Army established operational objectives to help transition to Army XXI: , Focused Logistics, Full-dimensional Protection, Information Superiority, Precision Engagement, and Dominant Maneuver. See Figure 1 in Appendix C for a comparison of Joint Vision 2010 Operational Concepts and the Army Modernization Program Objectives. Force XXI is currently testing technology and operational concepts that will make up Army XXI. These five operational objectives will give Army XXI the capability to maintain full spectrum dominance in a wide range of operations. This paper will address three that deal specifically with fires and maneuver in precision warfare

Information Superiority

Information superiority is the capability to collect, process, and disseminate an uninterrupted flow of information while exploiting or denying an adversary's ability to do the same.[54] This operational concept is essential to the other four operational objectives: precision engagement, dominant maneuver, focused logistics, and full-dimensional protection. These concepts rely on information to operate successfully.

Information superiority requires information systems that sense data, communicate securely and process information.[55] The Joint UAV and Commanche are examples of the systems that sense data for the U.S. Army division. A number of

communications systems will tie together sensors, computer systems, and soldiers on the battlefield to enable secure communications across the battlespace. Examples include the Single Channel Ground Air Radio System and the Multiple Subscriber Equipment. The ability to link sensors with soldiers is an integral piece of information superiority. The computer systems that process information from across the battlespace are essential to information dominance. Examples of systems that process data include the Army Tactical Command and Control System (ATCCS) will be widely used in the digitized battlespace. ATCCS has five subsystems: Advanced Field Artillery Tactical Data System (AFATDS), All Source Analysis System (ASAS), Maneuver Control System (MCS), Theater High Altitude Area Defense System (THAADS), Combat Service Support Control System (CSSCS). These subsystems assist in commanding and controlling the battlespace. ATCCS provides the information necessary for precision engagement and dominant maneuver to shape the battlespace and conduct decisive operations.

Information superiority is essential to precision warfare. In some situations information may be as important as ammo, fuel or water. Information is power on the battlefield. The ability to quickly collect, process, and use information is a requirement for precision warfare.

The Army's current tactic to maintain information superiority is to employ a wide array of electronic warfare systems to disrupt, deny, and damage threat information-gathering systems. Then, while the threat is blind, friendly forces use sensors to accurately locate targets, digitally transmit data, and engage and destroy these targets.[56]

The information environment will continue to improve substantially due to further improvements in communications technology and further advances in intelligence gathering and dissemination with systems like JSTARS and Commanche. The improved capabilities of these systems will also allow this information to flow down to levels that never before had access, in real time.

Precision Engagement

Precision engagement is a method of shaping the battlespace to disrupt and destroy enemy forces in rear areas before they reach the battlefield.[57] The complementary nature of precision engagement is evident in situations where fires reinforce dominant maneuver by allowing U.S. forces to shape the battlespace from extended ranges. The purpose of shaping the battlespace is to set the conditions for successful decisive operations. The modern concept of shaping the battlespace seeks to take advantage of the operational environment (terrain, weather and infrastructure) to set conditions both in terms of what we do to the enemy and how we posture friendly forces.[58]

Two of the systems that give the U.S. Army the capability to conduct precision strikes are the Crusader Field Artillery System and the Multiple Launch Rocket System. Appendix A highlights the increased capabilities of the Crusader by giving a detailed comparison of the current Paladin and the future Crusader. These systems help attack and destroy the enemy's capability to wage war by focusing deep on high payoff targets before they have an opportunity to effect friendly forces. Paramount to successful precision engagements are: real-time, near-perfect intelligence, coupled with concentrated, coordinated strikes by weapons systems using smart and brilliant weapons.[59] ATCCS

provides the command and control for the operation while systems like Crusader, MLRS and Apache Longbow provide the precision engagement and dominant maneuver capability.

The Crusader helps to conduct precision strikes and dominate the maneuver battle by delivering unprecedented firepower capabilities at extended ranges. The mission of the Crusader is to be the "system of systems" providing direct and general support fires to maneuver forces on the future battlefield. The Crusader provides a significant improvement in terms of responsiveness, firepower and survivability. The most significant capabilities of the Crusader include a 40+ km range and the ability to fire 10-12 rounds per minute as well as a multiple round simultaneous impact capability that allows it to fire four rounds and have them simultaneously impact.

Dominant Maneuver

Dominant maneuver is the multidimensional application of information, engagement and mobility capabilities to position and employ widely dispersed joint air, land, sea and space forces to accomplish the assigned operational tasks.[60] By definition dominant maneuver takes on an interdependent nature utilizing all capabilities in the battlespace to apply overwhelming firepower and maneuver. Appendix B highlights the increased capabilities of the M1A2 by comparing it to the M1A1.

Dominating the maneuver battle facilitates decisive operations. Ensuring swift, decisive victory, with minimal casualties is the single purpose of the maneuver battle. The combined arms team must maintain the ability to outmaneuver and outshoot potential adversaries. Coordinated fires that consistently engage the enemy from

unexpected directions and unmatched ranges, day and night allow the U.S. Army to dominate the maneuver battle. This requires the Army to "own the night," maintain superior situational awareness, and conduct compatible digital data exchange.[61]

There are several capabilities of the M1A2 that allow it to integrate well into a system of interdependent fire and maneuver. Digitization of the force and the capability to "own the night" dramatically increases the effectiveness of M1A2, causing shock effect and minimizing friendly casualties. The mobility of the combined arms team allows all elements to keep pace with the M1A2 and thereby conduct integrated operations at consistently higher tempos. Improvements in mobility, survivability and lethality all add to the ability to dominate the maneuver battle. Digitization allows unit commanders to exploit a unit's mobility and firepower more effectively while reducing the chance for fratricide.

There are a number of "systems of systems" that provide the ability to dominate the maneuver battle. The principle systems include: M1A2 Abrams Main Battle Tank, the M2/M3 Bradley Fighting Vehicle, the AH-64D Apache Longbow Attack Helicopter, the Javelin Antitank Missile. These systems gives the U.S. Army the ability to dominate the maneuver battle and create decisive operations.

One of the important dominant maneuver systems is the M1A2.[62] The M1A2 dominates the maneuver battle by providing heavy armor superiority on the battlefield. The Abrams tank closes with and destroys enemy forces on the integrated battlefield using mobility, firepower, and shock effect. The 120 mm main gun on the M1A2 combined with the powerful turbine engine and special armor makes the Abrams tank

particularly lethal, mobile, and survivable. Increased armor protection, suspension improvements and an NBC protection system are additional features on the M1A2. The M1A2 provides the tank with improvements to dominate the maneuver battle.

Conclusion

The Army is not resting on its laurels. Significant advancements in weapons systems will make possible significant changes in the doctrinal relationships between precision engagement and dominant maneuver. Information superiority allows the Army to win the information war. Systems that sense across the battlespace, share situational awareness, and process data are essential to attacking and exploiting enemy weaknesses. Advancements in systems that allow precision engagement improve range and lethality of fires. Upgrades in technology for the integrated battlespace improve the use of dominant maneuver in the battlespace allowing fires and maneuver to close with and destroy enemy forces using integrated mobility, firepower, and shock effect. Fires and maneuver, therefore, grow increasingly interdependent and better integrated as a result of improvements in technology.

Chapter 4

Fires and Maneuver: Move -- Strike -- Protect

You may fly over a land forever: you may bomb it, pulverize it, and wipe it clean of life – but if you desire to defend it, protect it, and keep it for civilization, you must do this on the ground, the way the Roman legions did, by putting your young men into the mud.

T.R. Fehrenbach
1963[63]

Introduction

This chapter investigates change by looking at the doctrine behind fires and maneuver. The title of this chapter suggests the underlying theme: fires **combined with** maneuver. In modern terms, T.R. Fehrenbach would say that you need precision engagement **combined with** dominant maneuver if you desire to "defend it [land], protect it, and keep it for civilization."

The central purpose of this chapter is to learn those lessons that are important to shaping the future of our army by looking specifically at the doctrinal issue of the use of fires and maneuver. This chapter is the foundational argument to this study. The *Move-Strike-Protect Model* will serve as the framework for a discussion of the future use of fires and maneuver.

The *Move-Strike-Protect Model* points out the complementary relationship fires and maneuver have given information dominance

The Move-Strike-Protect Model

The *Move-Strike-Protect Model* developed concepts that suggest how we fight based on patterns of operations. Patterns of operations derive from the tasks that armies have traditionally performed in previous wars and other military operations.[64] The patterns are very similar to the Joint Vision 2010 Operational Objectives. See Figure 2, Appendix D for a comparison of the patterns of operations, Joint Vision 2010 Operational Objectives and Army Modernization Objectives.

It's easy to single out three operational objectives for a study of fires and maneuver. A natural dependency develops between precision fires, dominant maneuver, and information superiority. As the capabilities of these individual objectives improve, the relationship between the operational objectives becomes more interdependent. Gaining and maintaining information dominance throughout an operation allows precision fires and dominant maneuver to shape the battlespace. Modern combat operations typically feature two phases: shaping, followed by decisive operations. Both of these operations rely on gaining and employing information dominance.

Maneuver Warfare

The *Move-Strike-Protect Model* addresses attrition warfare, maneuver warfare and precision warfare. This monograph will use the discussion of maneuver warfare and precision warfare to learn about the future relationships between fires and maneuver.

Maneuver warfare is an efficient means of attacking enemy weaknesses by avoiding strength on strength engagements. The goal of maneuver warfare is to throw

strength against enemy weakness. Maneuver warfare uses *non-linear, decentralized and opportunistic tactics.* Maneuver warfare attacks are *pulled by reconnaissance* around the enemy's strong points. This is an essential step to avoiding the enemy strength. Maneuver warfare considers the primary objective as *breaking the spirit and will* of the opposing high command not killing enemy troops or destroying enemy equipment. Doctrine establishes this complementary and mutually dependent relationship between fires and maneuver as a central focus of maneuver warfare. Fires help create the conditions that will permit maneuver. Maneuver, in turn, will take advantage of these conditions to seize the opportunity to place the enemy at a disadvantage and conversely, to place friendly forces in a position of advantage.

However, conventional warfare operates in an environment which does not have the benefit of information superiority and therefore requires tradeoffs.

Tradeoffs

The main premise of the *Move-Strike-Protect Model* is that a unit cannot do all three activities -- move, strike and protect -- all at once. The significance of tradeoffs is understanding the tradeoffs involved. Conventional warfare resulted in the following predicaments.

- A unit concerned solely with moving does not strike. It does not protect. It organizes itself in the most efficient movement formation and sets out on the move. The faster the unit moves the less concern the unit has for protection and the ability to strike. There are relative degrees of concern but they still involve trading between moving, striking, and protecting.

- A unit concerned with striking organizes its combat power and engages the enemy with as many systems as possible or necessary depending on the size of the force. Striking reduces the ability of the unit to move and protect itself.
- A unit that wants to protect itself does not move. It does not strike. Rather it digs in and establishes a perimeter to protect itself.

Although most tactical units do not limit themselves to one of these operations, the model is useful in developing the current dilemma tactical units face. Again in conventional warfare each choice involves a tradeoff because the commander could not risk movement, protection or striking. In the past, the art of tactical command was to adopt a tactic that included two of the three operations: move and strike (maneuver theory); move and protect (positional theory); or strike and protect (interchangeability theory). For a more detailed discussion of these theories, see Appendix D, The Move – Strike – Protect Model. These theories established a base to reason from. They represent the conventional approach to warfare.

Traditional warfighting forced the commander to make tradeoffs as we have demonstrated in the discussion above based on the conditions of METT-T. During tactical operations the commander could not totally ignore any one operation [move, strike, or protect] because he did not have total confidence in his situational awareness. Information dominance allows the tactical commander the ability to move, strike and protect more accurately and safely.[65] Force XXI theorists propose that we can dispense with the tradeoffs of maneuver, positional, and interchangeability theories. Units can

move faster, strike more accurately, and protect more economically using precision warfare.[66]

Precision Warfare

The digitized battlefield is quickly moving the U.S. Army into the realm of precision warfare. Essentially, precision warfare is a maneuver warfare hybrid. Joint Vision 2010 defines precision warfare as "A system of systems that will enable our forces to locate the objective or target, provide responsive command and control, generate the desired effect, assess our level of success, and retain the flexibility to re-engage with precision when required."[67]

Precision warfare affects a tactical force's ability to move, strike and protect. Through greatly improved situational awareness, precision warfare offers significant differentials which allow friendly forces to move, strike and protect more efficiently. The interdependent use of informational superiority, precision engagement, and dominant maneuver empower precision warfare.

Precision warfare facilitates attacks against enemy weaknesses helping to dislocate the enemy. There are several ways to dislocate the enemy. See Appendix E for a summary of each. The end result is a superior form of warfare that overwhelms the enemy by creating unexpected or unfavorable situations. Precision warfare uses known enemy locations, responsive command and control, precise engagements, dominant maneuver, accurate assessments of effectiveness and flexibility to outsmart and overwhelm the enemy.

Precision warfare improves battle command, facilitates freedom of action, relies on information superiority, supports economical warfare, improves decision making and often results in a tactical defense.

Improves Battle Command

Here's how precision warfare helps the commander. Information dominance provides greater situational awareness which allows rapid and agile movement using the three primary aspects of battle command: see the enemy, see yourself, and see the terrain. Significant advances in technology enable precision strikes in the following three areas:

1. Systems that provided extremely accurate, near real-time intelligence to allow precision targeting of enemy forces under all conditions. Improvements in the C4I systems that provide data the strike systems need to execute their mission.

2. Platforms and extended range weapons that deliver munitions to deep targets. Extended Range Multiple Launch Rocket System (ER-MLRS) and Army Tactical Missile System (ATACMS) are examples.

3. Smart and brilliant submunitions that will sense, track and destroy enemy targets under all conditions.[68]

These advances offer the commander an opportunity to exploit enemy weaknesses using fires and maneuver.

In the past the U.S. Army lacked the systems to enable precision warfare. Consequently commanders had to balance maneuver and fires with risk. For example, commanders often had to trade protection for opportunities to move and strike.

Information dominance changes all of this. Information dominance reduces uncertainty within the friendly force increasing uncertainty in the enemy force.

Facilitates Freedom of Action

Given systems that maintain information dominance throughout the operation, the commander can move, strike and protect at will. Ultimately the closer the commander approximates complete information dominance, the less concern he will have for tradeoffs between movement, striking and protection.

Relies on Information Dominance

Precision warfare relies on information dominance. It requires intelligence based on asymmetry and dislocation.[69] Asymmetry helps to orient precision warfare on enemy weaknesses. Dislocation helps establish a defeat mechanism. Typical questions that facilitate precision warfare include:

- "Where isn't the enemy?" [used to enable precision maneuver]
- "What will the enemy do?" [used to enable precision protection] and
- "What are the enemy weaknesses and vulnerabilities?" [used to enable precision strike][70]

Supports Economical Warfare

Precision warfare is more economical warfare.[71] Precision warfare gains economies in time, lives and resources. Better situational awareness allows faster movement and quicker defeat of the enemy. Units can do away with the slower tactical movement techniques in exchange for more efficient traveling formations. Improved battle command

allows improved more efficient protection. Information dominance eliminates the need for the use of reserves. Improved usage of both classes III and V foster more efficient use of resources.

Improves Decision Making

Analyzing the relationship between *moving, striking, and protecting,* shows the possibility of a change in the fires and maneuver relationship. Traditional warfighting has taught commanders to consider mission, enemy, terrain, troops, and time available (METT-T) and to *move, strike, and protect* in a prudent manner given the known conditions of the battlefield. Information superiority allows improved decision making. The basic premise of precision warfare is that, given information superiority, units can move, strike, and protect more accurately and safely.

Tactical Defense

A major insight regarding precision warfare is that precision strike operations could likely result in an increase in the number of tactical defenses.[72] A tactical defense would be especially useful in situations where contact with a larger and possibly stronger force is inevitable. Information dominance would allow the smaller force to pick the time and place to defend from.

Precision warfare can be understood in terms of a three-step process.

- **Step 1: Gain and employ information dominance.** It is essential to take advantage of information dominance to avoid decisive engagement. The maneuverist focuses on the enemy's vulnerabilities using steps two and three.

- **Step 2: Shape the battlespace.** The maneuverist considers dislocating the enemy by shaping the battlespace. He may employ a combination of or single forms of dislocation. He considers the integrated efforts of reconnaissance, security, information operations, combat support, combat service support, fire support and maneuver to accomplish his objective -- dislocation. Again, the overall goal involves maneuvering to a position of advantage.
- **Step 3: Decisive Engagement.** If the maneuverist has shaped the battlefield during the previous step, he should have been able to render the enemy strength irrelevant. The enemy may choose not to fight based on the location of friendly forces.

Conclusion

The growth of military capabilities affects the future use of fires and maneuver. Robert Leonhart's *Move-Strike-Protect Model* demonstrated the complementary and mutually dependent nature of fires and maneuver.

The following observations for future warfare suggest the more interdependent use of fires and maneuver. Information dominance is essential to precision fires and dominant maneuver. Given informational dominance, the future commander will be able to exploit the use of fires and maneuver. The tactical commander on the battlefield of 2010 will be able to move faster, strike harder and better protect his force. No longer will he have to accept tradeoffs between his abilities to move, strike, and protect based on METT-T.

Given information dominance the commander will be able to prosecute the fight much more efficiently. The commander leverages information by reducing his uncertainty while simultaneously increasing his opponents. He will achieve an overwhelming victory using precision engagements and dominant maneuver together to dislocate the enemy positionally, functionally, morally or temporally. These tactics will allow the commander to avoid strength on strength attacks while focusing on the enemies vulnerabilities and weaknesses. The use of Leonhard's model validate Joint Vision 2010's emphasis on information superiority, precision engagement, and dominant maneuver. Just as the Army of the 1920's found itself in a period of significant change where command and control systems developed, weapons systems improved, and doctrine changed, so to is the Army of the 1990's.

Chapter 5

Favorite Weapons

You should not have a favorite weapon!

17th Century Japanese Warrior
Miyamoto Musashi[73]

Implications of this Study

Musashi's words *are useful in understanding* the importance of interdependence on the modern battlefield. The complexity of modern combat is growing so much that a warrior can no longer expect to be successful using only his favorite weapon. The Force XXI combatant must integrate all weapons available.

There is an increasing need for interdependence in battlespace. Leaders improve their combat power by continuing to increase the interdependence of weapon systems in battlespace. This study has shown that precision warfare promises better integration of precision engagement, dominant maneuver, and information superiority. Each leader's goal should be to increase the interdependence between these three concepts.

Interdependence adds to the dynamics of combat power [maneuver, firepower, protection, and leadership]. Today's army focuses on synchronization. Tomorrow's Army should focus on interdependence as a combat power dynamic as well.

Further Study

Many a military leader has focused his entire military experience on learning more about the art of warfare. Training, massing effects, command and control of future warfare, and the threat are all topics that were outside the scope of this paper. These topics will become important issues in precision warfare and deserve individual attention.

Training

Much of the collective training of the U.S. Army focuses on an attrition-based training model. Robert Bateman realized in his article *Training for Maneuver:*

> The National Training Center trains the combat soldiers and officers to seek the enemy, to destroy the enemy through direct and indirect fires, and to face the full brunt of his strength with all of our strength in a titanic struggle to determine the strongest and most efficient.[74]

The combat training centers regulate and direct training in such ways as to force a "strength-on-strength, stand-up, fair fight."[75] Through the use of division orders and boundaries, they take away the initiative and audacity that is so important to maneuver warfare and will continue to be important to precision warfare. The question is "How can our training centers physically replicate and train precision warfare?".

Massing Effects

Dissipating mass is a significant concern of fire supporters today. With the increased capability to mass effects from across the battlefield, how significant will this concern be in future warfare?

Command and Control of Future Warfare

The digitized battlespace opens the door for micromanagement of small unit operations. Increasingly, technology offers the senior commander the ability to monitor and direct operations down to section level across much of the battlespace. This type of micromanagement quickly destroys the initiative of small unit leaders -- a fate detrimental to the future leader development. Force XXI needs leaders with initiative.

The Threat

There has been great discussion about asymmetrical threats. What is the extent of these threats and what plans do we have to reduce asymmetric threats?

Conclusion

The concept of integrated fires and maneuver is not new. A revolution in military affairs has set the conditions for significant changes in the U.S. Army. The quest for decisive operations has pushed the military to seek out new doctrine, a more interdependent doctrine that closely integrates every aspect of precision warfare. Commanders will be able to strike harder and move faster as a result of precision engagement, dominant maneuver and information superiority.

APPENDIX A – Relative Comparison: Precision Engagement Capabilities 1997 and 2010

	Paladin[76]	Crusader[77]
Mobility		
• Speed	40 Miles / Hour	42 Miles/ Hour
• Vehicle Range	214 Miles	Not Available
Responsiveness		
• Rate of Fire	2 Rounds / Minute	12 Rounds / Minute
• Response Time	Less than 60 Sec	Less than 30 sec
Firepower		
• Cannon Range Unassisted	24 KM	40 KM
• Cannon Range Assisted	30 KM	50 KM
• Projectile Loading	Full Stoke Hydraulic	Fully Automated
• Ammunition Capacity	39 Complete Rounds	60 Complete Rounds
Survivability		
• Radar Cross Section	None	Designed-in Signature Management
• Displace / Move Profile	Not Available	750 Meters / 90 Seconds
• Active Defense System	None	Integrated, Remote Controlled
• NBC	Individual Crew Protection	Collective Crew Protection
• Communications	Secure Voice and Digital	Secure Voice and Digital
• Microclimatic Cooling System	Integrated Heating and Cooling System	Integrated Heating and Cooling System
Reliability		
• Mean Time Between Failures	122 Hours	Not Available
Maintainability		
• Mean Time to Repair	2 Hours	Not Available

APPENDIX B: Comparison of Dominant Maneuver Capabilities

	M1A1[78]	M1A2[79]
Mobility		
• Speed	41.5 Miles / Hour	41.5 Miles / Hour
• Vehicle Range	289 Miles	289 Miles
Responsiveness		
• Independent Thermal Viewer	None	Commander's Independent Thermal Viewer
• Intervehicular Information System	None	Intervehicular Information System
• Position Navigation System	None	Position Navigation System
Firepower		
• Armament	120 MM	120 MM
• Fire Control System	Fire Control System	Improved Fire Control System
• Ammunition Capacity	(40) 120 MM (1000) .50 Cal (10,000) 7.62 Coax (24) Smoke	No Change
Protection		
• NBC Protection	NBC Protection	No Change
• Armor	Special Armor	No Change
• Digital Command and Control	None	Digital Command and Control
• Sights	Thermal Sights	2d Generation Forward Looking Infrared Sensors

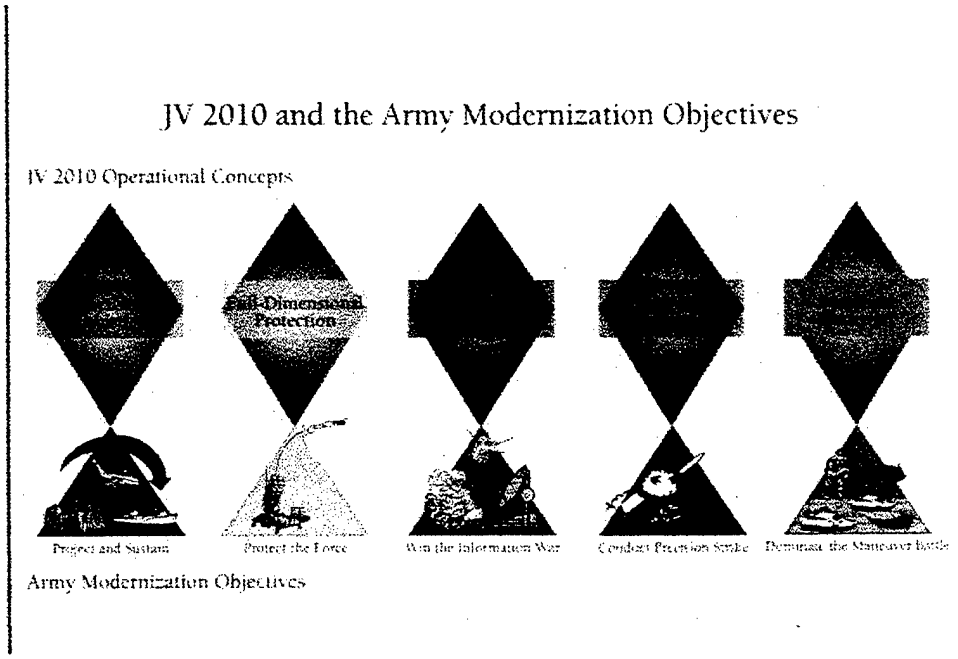

Figure 1: Joint Vision Operational Concepts and Army Modernization Objectives[80]

JV2010 Operational Concepts	*Patterns of Operations*	*Army Modernization Objectives*
Focused Logistics	Project the Force	Project and Sustain
Full Dimensional Protection	Protect the Force	Protect the Force
Information Superiority	Gain/Employ Info Dominance	Win the Information War
Precision Engagement	Shape the Battlespace	Conduct Precision Strike
Dominant Maneuver	Decisive Operations	Dominate the Maneuver Battle

APPENDIX D -- Move – Strike – Protect Model

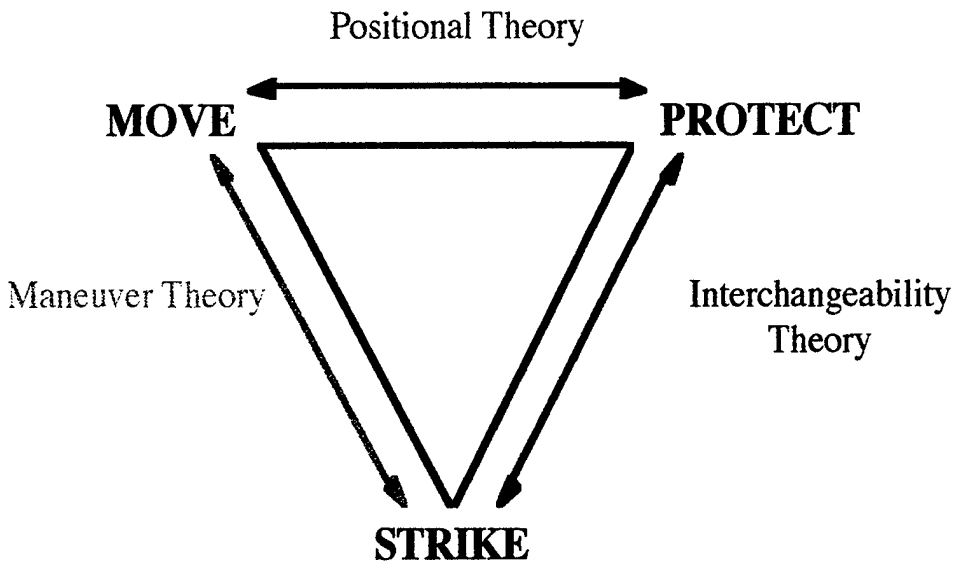

Figure 2 -- Move - Strike - Protect Model[81]

Theories

In the past, the art of tactical command was to adopt a tactic that included two of the three operations: move and strike (maneuver theory); move and protect (positional theory); or strike and protect (interchangeability theory).

Maneuver Theory

Maneuver theory aims to balance movement and striking. Maneuver theory accomplishes protection through moving and striking the enemy before the enemy can respond. German blitzkrieg tactics were an example of maneuver theory. Blitzkrieg tactics focused on synchronizing movement with artillery and air strikes.

Positional Theory

Positional theory aims to move and protect itself. It therefore moves in protected formations into areas that threaten enemy plans. Positional theory accomplishes striking by accomplishing the protected movement. The battle of Cannae, a classic envelopment, is an example of the positional theory in action. Hannibal defeated Roman forces using the tactic of a double envelopment. By placing weak forces in the center and strong forces on the flanks, Hannibal quickly surrounded the Roman forces. His cavalry then cut off the Roman line of retreat allowing him to kill more than 50,000 while only losing 7,000.[82] Hannibal employed the positional theory to move and protect himself.

Interchangeability Theory

Interchangeability theory conducts strike operations from protected locations. Interchangeability theory accomplishes movement as a result of accomplishing the protected strikes. Examples of interchangeability theory include recon -- strike complexes and maneuvering fires.

Traditional warfighting forced the commander to make tradeoffs as we have demonstrated in the discussion above based on the conditions of mission, enemy, terrain, time, troops available. During tactical operations the commander could not totally ignore any one operation [move, strike, or protect] because he did not have total confidence in his situational awareness. Information dominance allows the tactical commander the ability to move, strike and protect more accurately and safely.[83] Force XXI theorists propose that because we can dispense with the tradeoffs of maneuver, positional, and

interchangeability theories, we can move faster, strike more accurately, and protect more economically.[84]

APPENDIX E -- Forms of Dislocation

Dislocation

Force XXI theorists suggest that the goal of decisive operations should be to dislocate the enemy.[85] Dislocation is "the art of rendering the enemy strength irrelevant."[86] There are four forms of dislocation: positional dislocation, functional dislocation, moral dislocation and temporal dislocation.[87] In each of these forms of dislocation friendly forces render the enemy strength [position, function, moral, time] irrelevant.

- *positional dislocation* -- "Rendering the enemy strength irrelevant by removing it from the decisive point or by removing the decisive point from the enemy strength."[88] Examples of positional dislocation are envelopments and turning movements. Positional dislocation through an envelopment renders the enemy force irrelevant by cutting off the lines of communication and thereby making the force irrelevant.

- *functional dislocation* -- "Rendering the enemy's strength irrelevant through disruption of key functions."[89] Examples of functional dislocation are disrupting communications networks when key decisions are being transmitted; destroying bridges when crossing water obstacles; suppressing air defenses just before an air attack; and defeating sensors during enveloping maneuvers. Each of these examples renders the enemy's strength [communications, bridging, air defense, sensors] irrelevant through disruption of that function.

- *moral dislocation* -- "Rendering the enemy's strength irrelevant through the defeat of the morale of the leaders or soldiers or both."[90] Examples of moral dislocation are routs,

long-term demoralization, surrenders and panic. Each of these examples renders the enemy's strength [morale, self esteem, orderly actions] irrelevant through the defeat of the unit's morale.

temporal dislocation -- "Rendering the enemy's strength irrelevant through the manipulation of time; the enemy's actions, decisions, and dispositions are untimely."[91] Examples of temporal dislocation are surprise, preemptive attacks; counterattacks following enemy attack's culmination. Each of these examples renders the enemy's strength [ability to select the time and place of battle] irrelevant.

Glossary

Part I -- Abbreviations and Acronyms

AFATDS	Advanced Field Artillery Tactical Data System
ASAS	All Source Analysis System
ATCCS	Army Tactical Command and Control System
ATACMS	Army Tactical Missile System
CSSCS	Combat Service Support Control System
MCS	Maneuver Control System
QDR	Quadrennial Defense Review
RMA	Revolution in Military Affairs
THAADS	Theater High Altitude Area Defense System
UAV	Unmanned Aerial Vehicle

Glossary

Part II -- Terms and Definitions

The language of 2010 is very different, reflecting a significant need for precise definitions of the terms used in a discussion of doctrine for a new age.

Decisive Operations -- Military operations that impose our will on the enemy. Rendering the enemy strength irrelevant is a decisive operation.

Fires -- The U.S. Army defines fires as an action [verb] and as a battlefield operating system [noun]. As a verb, fires refers to the act of planning and coordinating the effects of indirect systems. As a noun, fires refer to the battlefield operating system that provides indirect fires. This system includes: armed aircraft, sea and land based indirect fires, and electronic warfare systems. This paper uses fires primarily to refer to the battlefield operating system in order to set the conditions for maneuver. For example, in the sentence below, fires is used to designate those indirect systems that help facilitate maneuver.

> A complementary relationship between fires and maneuver
> is at the heart of maneuver warfare.

Maneuver -- A distinction between maneuver as an action [verb] and maneuver as a theory [noun] is significant to understanding this work. As a verb, United States Army Field Manual 100-5 defines maneuver as the action that places the enemy in a position of disadvantage through the flexible application of combat power.[92] As a noun, the Army uses maneuver in reference to the theory of maneuver warfare.

Glossary

Maneuver warfare – This paper considers the possibility of evolving from a maneuver warfare approach given the capabilities of the information age. William Lind and Jeffrey Record describe maneuver warfare as:

- Uses *non-linear, decentralized and opportunistic tactic.* The goal always being to throw *strength against enemy weakness.*
- Attacks *pulled by reconnaissance* around the enemy's strong points and into his rear, to destroy his artillery, headquarters, communication and logistics. ["Pulled by reconnaissance" implies the use of reconnaissance assets to determine the friendly course of action. This is an essential step to avoiding the enemy strength.]
- Views maneuver as the ultimate tactical, operational and strategic goal while firepower primarily creates opportunities for maneuver.
- Considers the primary objective as *breaking the spirit and will* of the opposing high command by creating unexpected and unfavorable operational or strategic situations, not killing enemy troops or destroying enemy equipment.[93 94]

It is important to understand the maneuver warfare includes both fires and maneuver.

Maneuver warfare doctrine suggests that the purpose of fires is to permit maneuver. Fires permit maneuver in the close fight by affecting enemy systems or screening friendly forces. Fires commonly affect enemy systems by destroying, neutralizing or suppressing them, thereby permitting maneuver. Maneuver warfare doctrine suggests the purpose of maneuver is to achieve a positional advantage allowing a broad range of options. Doctrine establishes this complementary and mutually dependent relationship between fires and maneuver as a central focus of maneuver warfare. Fires help create the conditions that will permit maneuver. Maneuver, in turn, will take

advantage of these conditions to seize the opportunity to place the enemy at a disadvantage and conversely, to place friendly forces in a position of advantage.

Precision Warfare – A system of systems that will enable our forces to locate the objective or target, provide responsive command and control, generate the desired effect, assess our level of success, and retain the flexibility to re-engage with precision when required.[95]

Revolution in Military Affairs (RMA) – Doctor Tilford of the Strategic Studies Institute defines RMA as a theory of radical change that ultimately alters the "...way military institutions organize, equip, and train for war, and the way war is itself conducted..."[96]

ENDNOTES

Chapter 1

[1] U.S. Marine Corps, *FMFM 1, Warfighting* (Washington, DC: Department of the Navy, 1989), 27.

[2] William S. Cohen, Report of the Quadrennial Defense Review, Joint Force Quarterly (Summer 1997): 8.

[3] Ibid.

[4] Institute for National Strategic Studies, *Strategic Assessment 1997* (Washington, DC, National Defense University, 1997), 2. Compare this to a recent article in Army Magazine: David A. Fastabend, "Endless Evolution," *Army (May 1997): 46.* Here the author suggests that technology doubles in efficiency every 18 months. It's not so important that we identify the exact rate of change. The important issue is to gain an appreciation for the environment of change that we live in.

[5] David A. Fastabend, "Endless Evolution," *Army (May 1997): 46*

[6] CTC Trends, "Command and Control of Battlefield Operationg Systems," (Leavenworth: Center for Lessons Learned, Feb 97), II-29.

[7] Dennis J. Reimer, "Dominant Maneuver and Precision Engagement" *Joint Force Quarterly* (Winter 1996-97): 12.

[8] National Security Strategy, 4.

[9] General Gordon R. Sullivan and Colonel James Dubik, "Land Warfare in the 21st Century," *Military Review* (September 1993), 13-32; Headquarters, Department of the Army (HQDA), *Army Focus: Force XXI* (Washington DC: U.S. Government Printing Office (GPO), September 1994). HQDA, *Decisive Victory: America's Power Projection Army, White Paper* (Washington, DC: GPO, October 1994).

[10] The editor of the Armed Forces Journal suggests that the U.S. Military needs to adopt a new way of looking at warfare in light of the changing national security environment in the January 1997 Armed Forces Journal.

[11] "The New Logic," *Armed Forces Journal* (January 1997): 42.

[12] Ibid., 43.

[13] White House, *A National Security Strategy for a New Century* (Washington, DC: U.S. Government Printing Office, 1997), 2.

[14] Larry D. New, "Clausewitz's theory: On war and its application today," *Airpower Journal* (Fall 1996): 3.

[15] Chairman, Joint Chiefs of Staff, *National Military Strategy of the United States of America* (Washington, DC: U.S. Government Printing Office, 1997), 4.

[16] John M. Shalikashvili, "A Word from the Chairman," *Joint Force Quarterly* (Summer 1997),1.

[17] The source: *The World Factbook, 1996*, (Washington, DC: Central Intelligence Agency, 1997), 97. lists 191 nations plus 75 other dependent areas, other areas and areas of special sovereignty.

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[18] John M. Shalikashvili, "Joint Vision 2010: America's Military--Preparing for Tomorrow," *Joint Force Quarterly* (Summer 1996), 37.

[19] A.A. Neznamov, *Trebovaniia kotorye pred'iavliaet soyremennyi boi k podgotovke (obucheniiu) nachal'nikov i mass* (Saint Petersburg: 1909), 3.

[20] Mark Bender addresses key concerns of the period between World War I and World War II. "Mobility and finesse were keys to the offense, rather than concentrated brute force, which required a greater investment of men and material. Surprise was also advantageous, because the attacker was able to choose the time and place of attack."

[21] Ralph Peters, "After the Revolution," *Parameters* vol. 25 no. 2, (Summer 1995): 7-14.

[22] Dennis J. Reimer, "Challenge and Change: A Legacy for the Future," *Military Review* (July - August 1997), 108.

[23] Ibid., 110.

[24] "QDR Arrives to Favorable Reviews," *Army Times*, 2 June 1997: 17.

[25] Ibid.

[26] Sir Michael Howard, "Military Science in the Age of Peace," *RUSI, Journal of the Royal United Services Institute for Defense Studies* (March 1974): 3-4.

[27] Department of the Army, "Decisive Victory: America's Power Projection Army," *A White Paper* (October 1994), 23.

[28] Headquarters, Department of the Army, "Army Focus: Land Combat in the 21st Century," (Washington DC: U.S. Government Printing Office (GPO), September 1994), 13.

[29] Authors of change refers to the many important theorists who over the years have offered their ideas about the future of warfare. Liddel Hart, JFC Fuller, and Robert Leonhard have all offered important ideas about the future of warfare.

[30] Decide, detect, deliver and assess refers to the doctrinal targeting process. Tracking occurs simultaneously throughout the process. For more discussion of the targeting process see FM 6-20-10, Tactics, Techniques and Procedures for the Targeting Process

[31] Chairman Joint Chiefs of Staff, *Joint Vision 2010*, (Washington, DC: Office of the Chairman of the Joint Chiefs of Staff, 1996),1.

[32] Ibid., i.

[33] The five operational concepts of Joint Vision 2010 are: Project the Force; Protect the Force; Information Superiority; Precision Engagement; and Dominant Maneuver.

[34] Army Chief of Staff, *Army Vision 2010*, (Washington, DC: 1996),i.

[35] Ibid.

[36] Fastabend, *46.* Here the author suggests that technology doubles in efficiency every 18 months.

[37] *The Economist*, "The Future of Warfare: Select Enemy Delete," (March 8, 1997), 21.

[38] Gordon R. Sullivan, "Future Vision," *Military Review* (May-June 1995), 8.

[39] John M. Shalikashvili, "Joint Vision 2010: America's Military Preparing for Tomorrow," *Joint Force Quarterly* (Summer 1996), 39.

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[41] Robert Holzer, "Krulak Wams of Over-Reliance on Technology," *Defense News* (7-13 October 1996), 4 and 32.

[42] Dennis J. Reimer, "Dominant Maneuver and Precision Engagement," *Joint Force Quarterly* (Winter 96/97), 13.

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[50] Johnnie E. Wilson, "The Necessity of Advanced Technology: The Information Age Army," *Army* , June 1997, 22.

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[53] General Dennis J. Reimer, "Challenge and Change: A Legacy for the Future" *Military Review* (July-August 1997), 114.

[54] *Weapons Systems,* 2.

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[57] Ibid., 152.

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[62] Ibid., 173.

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[64] Ibid.

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